

Saturday



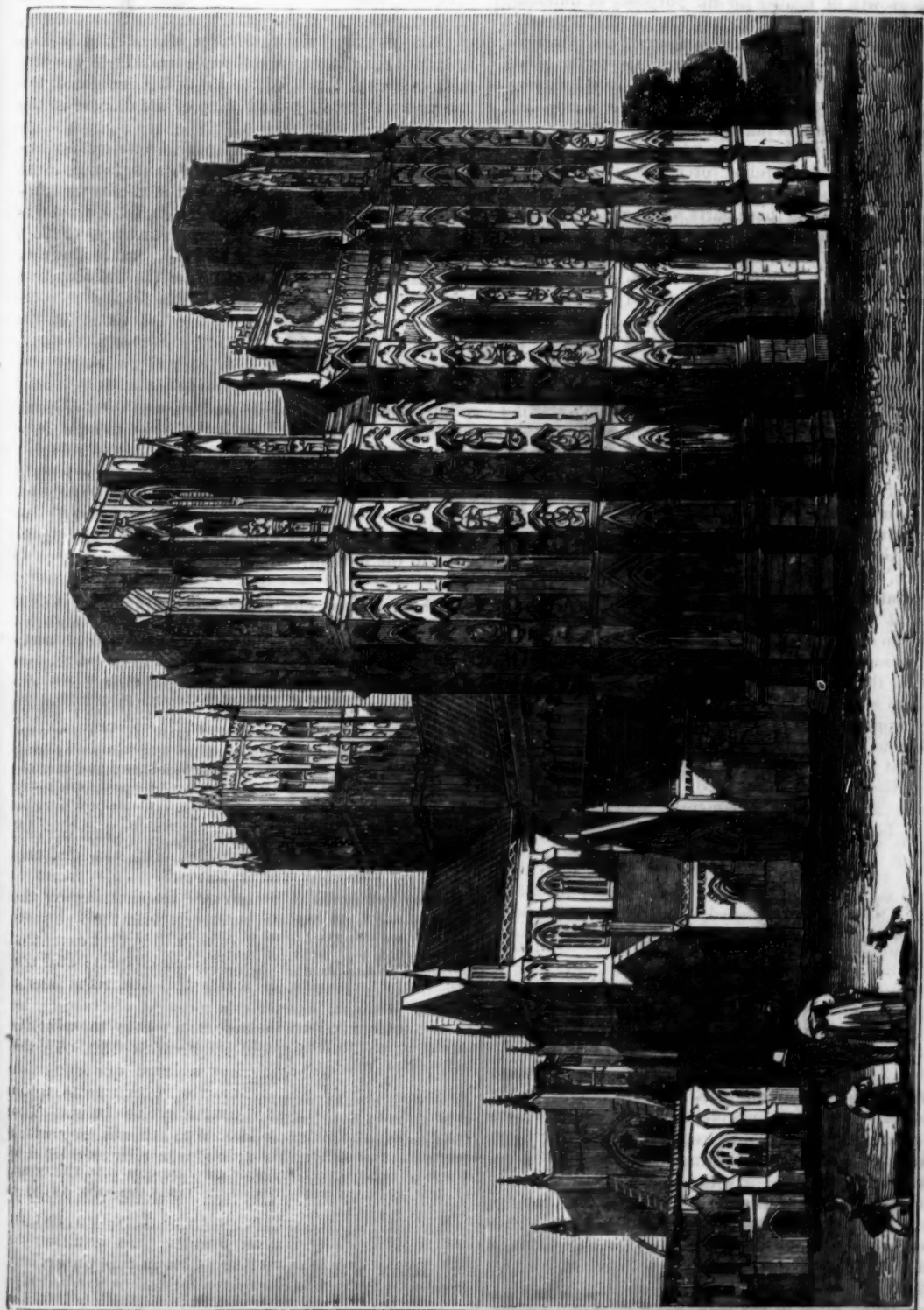
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WELLS CATHEDRAL.

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THE interesting little city of WELLS, in Somersetshire, derives its name from a spring, called St. Andrew's Well, which rises near the Bishop's palace, supplies a deep moat surrounding that building, and issues through the south-west parts of the city. It is said that the reputed miraculous character of this well, which, among other wonderful properties, was considered bottomless, induced Ina, King of the West Saxons, to build a collegiate church here, about the year 704, in honour of the Apostle whose name it bears. Some antiquaries have maintained that there had been a bishopric of Somersetshire fixed at Congresbury, even as early as the year 167; but as the learned are not agreed upon this point, we shall lay no stress upon it, but proceed to relate the circumstances under which the first Bishop of Wells was appointed.

In the reign of the Anglo-Saxon monarch, Edward the Elder, Pope Formosus, for some unknown reason, but probably to show the extent of his power, took upon himself to excommunicate the whole nation. This dreadful, or ridiculous sentence, continued in force for some years, by which several sees became vacant. At length, the degraded monarch determined to call a synod, to consider the state of the church; and Plegmund, Archbishop of Canterbury, was summoned to a council, for this purpose. It was agreed, accordingly, that in the kingdom of Wessex, where there had been only two bishoprics, (Winchester and Sherborne,) three new ones should be created; namely, WELLS, Crediton, and St. Petrock. To effect this object, Plegmund was dispatched to Rome, to get the excommunication removed, and have the new bishops approved; the result of which was, that seven bishops were consecrated in one day, among whom, Athelm, a monk of Glastonbury, became Bishop of Wells. His successor, WOLFELMUS (A.D. 924), was remarkable for his piety and learning. He laid the foundation of the present Cathedral, which, having been raised, improved, and adorned, by succeeding prelates, is now, perhaps, one of the most beautiful specimens of religious architecture in England.

Bishop Giso is the next name which appears worthy of special record in this place. He strenuously opposed Harold, Earl of Wessex, in his cruel spoliation of the church of Wells, and was afterwards banished in consequence; but having been restored on the accession of the Conqueror, he improved the revenues of the Church, increased the number of canons, and added buildings for their accommodation. He died after an eventful life, A.D. 1088.

Bishop JOHN DE VILLULA, by the authority of William Rufus, removed the see of Wells to that of Bath, taking upon himself the title of Bishop of Bath, and died in 1123. This title, however, did not long continue; for in the time of Bishop ROBERT, who appears to have mixed himself up in the civil broils of his day, more than was becoming in an ecclesiastic, and thence to have been placed as a prisoner in Bristol Castle, a violent quarrel arose between the monks of Bath and the canons of Wells, as to which of these cities should be honoured with the episcopal seat. This business being referred to the Bishop, he ordained, that the bishops of this diocese should neither be called "Bishops of Wells," as they had been of old, nor "Bishops of Bath," as they had been of later times; but that, taking their name from both churches, they should thenceforth be called Bishops of BATH and WELLS; that each of the churches, when the see was vacant, should appoint an equal number of delegates, by whose votes the bishop

should be chosen, and that he should be installed at both places. "And so it stood," says Heylin, "until the reign of King Henry the Eighth, what time, the monastery of Bath having been dissolved, there passed an Act of Parliament for the Dean and Chapter of Wells to make one sole chapter for the Bishop."

King Henry the Second held this bishopric in his own hands upwards of eight years and a half after the death of Robert, which happened in 1166; receiving all the rents and profits of the vacant see. SAVARIC, who succeeded in 1192, for personal reasons, transferred the episcopal seat to Glastonbury, and died in 1205, bishop of that place. But Bishop JOSCELINE, to whose munificence and taste we owe the noble west front of the Cathedral, resumed the title which is used by the bishop of the diocese at the present day.

The following names of Bishops who were contributors and benefactors to this church and fabric, must not be omitted; namely, RALPH of SHREWSBURY (died 1363), RALPH ERGUM, who fortified the episcopal palace (1400), NICHOLAS BUBWITH (1425), THOMAS DE BECKINGTON (1465), and ROBERT STILLINGTON (1491), in whose time the building was completed.

On finding enumerated among the names of the bishops of Wells in later times, those of WOLSEY, LAUD, KENN*, BEVERIDGE, and KIDDER, we can only regret that our limits prevent us from doing more in this paper than simply reciting them; though the life of either of these persons might well form a subject of just interest, and valuable reflection, for the pages of our Magazine.

But to proceed to a description of the Edifice, which is in the form of a cross. The west front, as displayed in the engraving, is esteemed one of the first instances of church architecture in Europe. It is adorned with a vast variety of figures of apostles, kings, queens, popes, bishops, and cardinals, admirably carved; placed in niches, and under canopies, supported by light slender pillars of polished marble. One whole line of this front displays a grotesque view of the resurrection, in which are expressed the various attitudes of the bodies rising from their respective tombs. "The church itself," says Camden, "is throughout very beautiful; but the frontispiece thereof, in the west end, is a most excellent and goodly piece of work indeed; for it riseth up still from the foot to the top, all of imagery in curious and antique wise, wrought of stone carved, and embowed right artificially, and the cloisters adjoining very fair and spacious." This front is flanked by two smaller towers. On entering by the western gate, the visiter is struck with the lightness and elegant finish, as well as with the great extent of the interior; the richly ornamented chapels; and the splendid monuments, of which this Cathedral has a large share.

The length of the edifice, from east to west, is stated to be 380 feet, and its breadth 130. In the centre of the transept rises a large quadrangular tower, 160 feet high, the base of which rests upon four broad arches, and contains five bells. The length of the nave is 190 feet; this is separated from the two side aisles by eighteen clustered pillars, nine on each side, supporting pointed arches. The length of the choir is 108 feet. Behind the latter is the chapel of the Virgin, which is fifty-two feet in length, and thirty-five in breadth. In addition to the antique memorials of the dead in this Cathedral,

* Thomas Kenn was consecrated Bishop of Wells in 1684, but was deprived in 1690, for not taking the oaths to King William and Queen Mary.

there are several interesting ones of a more modern kind. When we paid it a visit in the course of last autumn, the workmen were employed in erecting a beautiful white marble monument, the work of Sir F. Chantrey, at the east end of the south aisle to the memory of a worthy person lately deceased.

Having alluded to the chapels in this Cathedral, we may specify *BUBWITH'S*, *KNIGHT'S*, *BECKINGTON'S*, *St. CATHERINE'S*, and *MILTON'S* Chapels, as worthy of observation. In the north aisles there are other chapels, in one of which, is a most curious relic of antiquity: namely, Peter Lightfoot's clock. This clock, the work of a monk of Glastonbury, has an astronomical dial, surmounted by a barrier of small figures on horseback, representing knights at tournaments, which, by a movement of the machinery, are hurried round with amazing rapidity.

On the south side of the Cathedral is the cloister, the west side of which, 162 feet in length, was built by Bishop Beckington; the south side, 152 feet in length, was begun by the same bishop, but completed by Thomas Henry, Treasurer of Wells; the east side, 159 feet in length, was the work of Bishop Bubwith.

The Chapter-house, an exceedingly elegant room, is an octagon, fifty-two feet every way, supported by a clustered pillar, gracefully rising from the centre.

The diocese of Bath and Wells consists of the county of Somerset, with the exception, in future, of the parish of Bedminster; that large and populous parish, which adjoins the city of Bristol, having been transferred by a recent Order in Council, pursuant to the recommendation of the Ecclesiastical Commissioners, to the diocese of Gloucester and Bristol, and the Archdeaconry and Deanery of Bristol, on the first vacancy of the See of Bath and Wells. It is at present in the last-mentioned diocese, and it is a remarkable circumstance, that the daughter churches to Bedminster, namely, *St. Mary Redcliffe* and *St. Thomas*, with its chapel of *Abbotsleigh*, though in the city of Bristol, were formerly in the diocese of Bath and Wells. The Right Rev. Dr. George Henry Law, appointed in 1824, is the present bishop. "This diocese," adds Heylin, "has yielded to the Church of Rome, one Cardinal, and to the civil state of England, six Lord Chancellors, five Lord Treasurers, one Lord Privy Seal, one Lord President of Wales, one principal Secretary of State." M.

THERE is not such a mighty difference, as some men imagine, between the poor and the rich; in pomp, show, and opinion, there is a great deal, but little as to the pleasures and satisfactions of life: they enjoy the same earth, and air, and heavens; hunger and thirst make the poor man's meat and drink as pleasant and relishing as all the varieties which cover the rich man's table; and the labour of a poor man is more healthful, and many times more pleasant too, than the ease and softness of the rich.—SHERLOCK.

THERE is a sort of variety amongst us which arises from our climate, and the dispositions it naturally produces. We are not only more unlike one another than any nation I know, but we are more unlike ourselves too, at several times, and owe to our very air some ill qualities as well as good.—SIR WILLIAM TEMPLE.

THE surest and the shortest way to make yourself beloved and honoured, is to be indeed the very man you wish to appear. Set yourself, therefore, diligently to the attaining of every virtue, and you will find on experience that no one whatsoever but will flourish and gain strength when properly exercised.—SOCRATES.

FOLLY consists in the drawing of false conclusions from just principles, by which it is distinguished from madness, which draws just conclusions from false principles.—LOCKE.

A CHURCH-YARD SCENE.

How sweet and solemn, all alone,
With reverend steps, from stone to stone,
In a small village church-yard lying,
O'er intervening flowers to move!
And as we read the names unknown
Of young and old to judgment gone,
And hear in the calm air above
Time onwards softly flying,
To meditate, in Christian love,
Upon the dead and dying!
Across the silence seem to go
With dread-like motion, wavering slow,
And shrouded in their folds of snow,
The friends we loved long long ago!
Gliding across the sad retreat,
How beautiful their phantom-feet!
What tenderness is in their eyes,
Turned where the poor survivor lies
'Mid monitory sanctities!
What years of vanished joy are fanned
From one uplifting of that hand
In its white stillness! when the Shade
Doth glimmeringly in sunshine fade
From our embrace, how dim appears
This world's life through a mist of tears!
Vain hopes! blind sorrows! needless fears!

Such is the scene around me now:
A little Church-yard on the brow
Of a green pastoral hill;
Its sylvan village sleeps below,
And faintly here is heard the flow
Of Woodburn's summer rill;
A place where all things mournful meet,
And yet the sweetest of the sweet,
The stillest of the still!
With what a pensive beauty fall
Across the mossy mouldering wall
That rose-tree's clustered arches! See
The robin-redbreast warily,
Bright, through the blossoms, leaves his nest;
Sweet ingrate! through the winter blest
At the firesides of men—but shy
Through all the sunny summer hours,
He hides himself among the flowers
In his own wild festivity.
What lulling sound, and shadow cool
Hangs half the darkened church-yard o'er,
From thy green depths so beautiful,
Thou gorgeous sycamore!
Oft hath the holy wine and bread
Been blest beneath thy murmuring tent,
Where many a bright and hoary head
Bowed at that awful sacrament.
Now all beneath the turf are laid
On which they sat, and sang, and prayed.
Above that consecrated tree
Ascends the tapering spire, that seems
To lift the soul up silently
To heaven with all its dreams,
While in the belfry, deep and low,
From his heaved bosom's purple gleams,
The dove's continuous murmurs flow,
A dirge-like song, half bliss, half woe,
The voice so lonely seems!—WILSON.

THERE are few men who are not ambitious of distinguishing themselves in the nation or country where they live, and of growing considerable with those with whom they converse. There is a kind of grandeur and respect which the meanest and most insignificant part of mankind endeavour to procure in the little circle of their friends and acquaintance. The poorest mechanic, nay, the man who lives upon common aims, gets him his set of admirers, and delights in that superiority which he enjoys over those who are in some respects beneath him. This ambition, which is natural to the soul of man, might, methinks, receive a very happy turn; and, if it were rightly directed, contribute as much to a person's advantage as it generally does to his uneasiness and disquiet.—ADDISON.

Do evil to no man for malice, neither commit any vice for covetousness.—SIR THOMAS SMITH.

THE WOOLLEN MANUFACTURE.

II.

PREPARATION OF LONG WOOL.

IN our first article on this subject, we confined ourselves to the history of the woollen manufacture, and a description of the Merino breed; we shall now endeavour to explain, as clearly as the subject or our limits will allow, the various processes through which this useful material passes, before it is made into clothing of various kinds. We have already noticed that wool is distinguished by two names,—*long wool*, and *short-stapled*, or *cloth wool*. The preparation of long wool for the weaver differs considerably from the method employed in the case of the cloth wool. It is necessary, for the subsequent processes of the manufacture, that the fibres of the long wool should be drawn out in such a manner as to be as equal in length, and as nearly parallel to each other, as possible. To this end, it undergoes the operation of combing, the wool being previously washed and dried. Although in many factories, machinery has been invented for the purpose of facilitating the combing of wool, the plan of performing it by hand is still frequently resorted to; the implements used are, two combs for each workman; a post to which one of the combs can be fixed, and a *comb-pot*, which is a small stove, to heat the combs, the heat materially assisting the process. Each comb is composed of two rows



A WOOL-COMB.

of pointed steel teeth, disposed in parallel rows: one of the rows contains longer teeth than the other; they are fixed into a wooden stock covered with horn, to which a handle is affixed. Each row contains about twenty-four teeth, the longest being nearly twelve inches in length, and the shortest eight.

The combs used for the last combing of the wool have three rows of teeth. On one side of the post we have mentioned, which is firmly fixed in the floor, a contrivance is made for the purpose of fixing one of the combs when necessary. A and B, fig. 2, are two pieces of strong wire, one straight and the other bent upwards at its extremity, which are firmly fixed into the upright post. There is a hole in the handle at A, fig. 1, through which the turned-up end of the bent wire is passed, while the straight wire is inserted in another hole, which pierces the end of the handle: by this means the comb is kept steadily in one position. The furnace to heat it is constructed

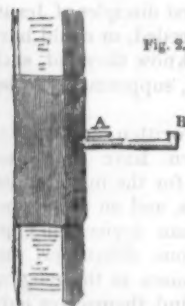


Fig. 2.

in the following manner:—Fig. 3 is a general view



Fig. 3.

A COMB-POT.

of the furnace to heat the teeth of the combs: A is the door to the fire-place; B is the flue; C D are two iron plates, which are heated by the furnace, and kept at a sufficient distance from each other by narrow slips of iron to admit the teeth of the combs into the spaces left between them. The wool, before it reaches the comb, has been rudely combed by passing

through a machine called a *plucker*, which is attended to by a boy.

In order to comb the wool, it is separated by the workman into handfuls, each containing about four ounces: these small quantities of wool are sprinkled with oil, and worked in his hands to distribute it equally; the quantity of oil is considerable, varying from one-sixteenth to one-fortieth of the weight of the wool. The comb is first heated by introducing the teeth into the stove, in one of the cells between the iron plates; when it has acquired sufficient heat, it is withdrawn, and another comb is put in its place. The heated comb is then fastened to the post, with its teeth pointing upwards, in order to be filled with wool: the comb takes one-half of the handful of wool in his hands, and catches it upon the teeth of the comb, by throwing the wool over the points, so that they penetrate it; then by drawing the wool towards him, and at the same time downwards to the bottom of the teeth, a portion of the wool will remain in the teeth: this is repeated several times, until at last the comb retains the whole of the wool. The comb thus filled, is placed with its points in the stove, and the wool which is upon it remains outside the stove, becoming slightly warmed. The other comb which was heating while the first was filling, is now filled in turn, in the same manner as the first, and is then put to heat with the wool upon it; and, while this is going on, the workman occupies himself in preparing a handful for the next combing.

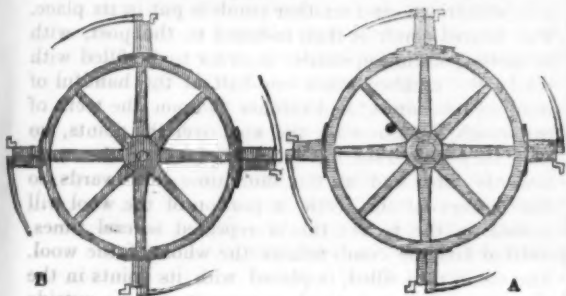
When both combs are properly warmed, the comb takes one of them with his left hand over his knee, as he is seated on a low stool, and with the other comb held in his right hand, he combs the wool upon the first by introducing the points of the teeth of one comb into the wool contained in the other, and drawing them through it until the wool is disentangled. During the working he frequently changes the combs, and as that which is most worked collects the greatest quantity of wool, he so manages it, that at the last, the whole of the wool is brought together in one comb, from which it hangs in a loose smooth lock. He then again heats the comb for a minute, and fixes the comb once more upon the post, and proceeds to draw off the wool; this he does with the fore finger and thumb of both hands, drawing off a portion at a time; a portion of short wool still remains on the comb, which has the name of *noil*.

The wool which is drawn off from the comb forms a sliver or band, the fibres of which are straight and parallel, but not sufficiently so for spinning; it is therefore combed over again, and frequently a third time. When the combing is finished, the slivers are formed into parcels, each containing five or six slivers, which are rolled up together into a ball, and ticketed with the weight and quality, the wool-comber's mark, and the wool-stapler's mark. In this state combed wool is called *tops*, or *Jersey*, and is sold to the spinners in the country.

Much of what we have been describing as done by hand, is performed, as already noticed, by machinery, in large factories; but it was believed that a description of wool-combing in its simplest mode would be more intelligible than if combined with an account of complicated machinery.

The next engraving represents the principal parts of a very ingenious machine for combing wool; the parts shown are the combs, consisting of four pair, which are fixed to the circumference of two revolving wheels; these combs are heated before they are fixed on the wheels. By very ingenious machinery, these wheels are made to describe all the evolutions which are necessary to comb the wool,

which, of course, is placed on the teeth in the usual manner by hand. When the revolution of the wheels first begins, they revolve in opposite directions; and the teeth of the combs are at a considerable distance from each other, so that they merely take hold of the longest ends of the wool; as their revolution proceeds, the wheel *B* slowly approaches the wheel *A*, and their teeth go more deeply into the lock of wool. (*A* merely revolves on its own axis, while *B* has a very complicated movement imparted to it.) When the teeth enter the wool, the revolving motion



of both wheels is very slow; but as *B* retreats to comb the wool, the motion becomes much more rapid; this advancing and retreating takes place four times in each revolution. But *B* has another or side-long motion belonging to it, so that the same teeth are not opposed to each other at each successive turn of the wheels. When the number of revolutions required have been performed, which depends upon the purpose to which the wool is to be applied, the machine itself rings a bell as a signal to stop it; when the locks of wool already combed are taken out, together with the combs, and others that have been loaded and heated are substituted in their place. Latterly, steam has been applied for the purpose of keeping the combs constantly hot.

The wool being combed either by hand or machine, has next to be formed into a worsted thread; if this is done by hand, the spinning-wheel is employed; if by machinery, other means are resorted to. The combing has reduced the wool to slivers, which, we have already learned, have been rolled up in balls, ten or twelve together. These are unrolled at the spinning-mill, and they are laid on a long plank or trough, with the ends lapping over, so that the long end and the short end shall lie together.

The long end of the sliver is that end which is first taken hold of by the workman in removing it from the comb; the fibres are necessarily longer, but much fewer in number, than at the other or short end. The service of the *breaking-frame* is next required. The annexed sketch merely shows the parts essential to the understanding of the mode in which the breaking-frame acts. *A* is the *planking table*, on



which we have already noticed, the slivers have been arranged in a continuous line. The slivers are unrolled, parted, and hung loosely over a pin within reach of the boy who feeds the machine, and takes the end of a sliver, and offers it at *B*, the point of

contact of two of the rollers: as these rollers are in motion they draw the wool in; the sliver is then conducted through the other rollers, as shown in the figure; when it has passed half through, the end of another sliver is placed upon the middle of the first, and the pair move on together: when this second has passed half through, a third sliver is added, and so on, until the short slivers produced from the combing, are joined in one regular and even band or sliver. The rollers at *B* move only at one-third the rate of those at *C*, so that the same quantity of worsted which measured one foot when it entered at *B*, measures three feet when it leaves the last rollers at *C*, to be delivered into the can *D*. In some more recent breaking frames, the worsted undergoes a kind of second combing, as it passes from the series of rollers at *B* to those at *C*.

The remaining operations of *drawing*, *roving*, and *spinning*, are nearly the same as in the case of cotton wool, which has been already described in the *Saturday Magazine*, Vol. V., p. 100.

EASY LESSONS ON CHRISTIAN EVIDENCES.

No. XI.

OBJECTIONS.

As there are persons who reject the Christian religion, you may perhaps suppose that they have undertaken to refute the proofs of it; and that they have found answers, such as satisfy themselves, to the evidences and reasons on which it is believed; or at least to some of the principal of the reasons, such as have been just put before you.

But you are not likely to meet with any one who will undertake this. At least, up to this time, no such attempt has been made, in any book that has been hitherto published. Unbelievers, though they have had nearly two thousand years to try, have never yet been able to show, or even attempted to show, how all such marks of truth as have been pointed out to you—and which certainly are not to be found, at least in any *known* false story,—could have met together in the Gospel-history, supposing it false. No one has ever explained in what way the first disciples of Jesus, circumstanced as they were, succeeded, or could have succeeded, in propagating, as we know they did, such a religion as that of the Gospel, supposing it to be, not from God, but from Man.

And yet many persons have written and spoken against Christianity. How then have they proceeded? Instead of accounting for the introduction of Christianity by natural causes, and on the supposition of its being a mere human device, they are accustomed to put forward various difficulties, and start *objections* against several points in the religion. And unlearned Christians often find themselves hard pressed with these objections; and suppose that they are called upon either to find answers to everything that can be urged against their faith, and give a satisfactory solution of every difficulty that is pointed out, or else to abandon it; or, at least, confess that they cannot defend it.

Now you have, indeed, been taught that it is a Christian's duty to be "ready to give an answer to every one that asks a reason of the hope that is in you." But this is a very different thing from being prepared to answer every *objection*. If a person asks you why you are a Christian, or, on what grounds you would call on a Pagan to embrace Christianity, this is quite a different thing from his asking you, "how you can explain this?" "and how do you reconcile that?" "and how do you remove such and such difficulties?"

I am not saying, (you will observe,) that no such questions as these ought ever to be asked; or that there is no occasion to seek any answers to them; but only, that they are not at all the *same thing* as the other question,—the inquiry for a reason of our Christian hope. And it should also be observed, that it is not the most natural and reasonable way of examining any question, to *begin* with the looking to objections against any system, or plan, or history, before we inquire into the reasons in its favour. And yet it is thus that some people are apt to proceed in the case of the Christian religion. Having been brought up in it from childhood, and received it merely as the religion of their fathers, they, perhaps, meet with some one who starts objections against several points; and then they think themselves obliged to find an answer to each objection, and to explain every difficulty in the Gospel-system, without having begun by learning anything of the positive evidence on which it is founded. And the end of this sometimes is, that their minds are disturbed, and, perhaps, their faith overthrown, before they have ever begun to inquire into the subject in the right way.

Some persons will advise you, for fear of having your mind thus unsettled, to resolve at once never to listen to any objections against Christianity, or to make any inquiries, or converse at all on the subject with any one who speaks of any doubts or difficulties; but to make up your mind once for all, to hold fast the faith you have been brought up in, on the authority of wiser men than yourself, and never to attend to any reasoning on the subject.

You have already seen, that if our forefathers had gone upon this plan, we should at this day have been Pagans like them: and that if all the world had proceeded thus when the Apostles first appeared, all men would have kept to the religion of their fathers, (as the chief part of the most learned and most powerful among them did,) (see 1 Cor. i. 26,) and Christianity would not have existed at all. And you ought to observe also, that when a learned man says that ordinary Christians had better shut their ears against all doubts and arguments, and be satisfied to take the word of the learned for the truth of the religion, a suspicion is often raised that he does not really believe it himself, but wishes to support it for the sake of the lower classes; and considers that the less they think, and reason, and inquire, the less danger there is of their being undeceived. Such appears to have been, generally, the state of mind of the educated classes among the ancient Heathen, in respect of their religion. They thought it useful for the vulgar to believe in the fables about their gods; and being aware that these would not stand the test of examination, they did not approve of any inquiry on the subject.

But it is likely that many of those who discourage ordinary Christians from using their reason on the subject of Christian evidences, are not themselves unbelievers, but are merely timorous and distrustful, and see the dangers on one side, while they overlook those on the other. They see that there is a danger of men making an ill use of their reason: which there certainly is, as well as of any other gift. The servant, in the parable, (Luke xix. 20, Matt. xxv. 25,) who was entrusted with one talent, might have employed it ill, and lost it; but it was not, therefore, the safe course to lay it by in a napkin. There is danger of the misuse of money, or of food. We know that many shorten their lives by intemperance. Yet food was bestowed for the support of life, and not for its destruction. And so, also, God has provided evidence to prove the truth of Christianity,

and has given us the faculty of reason, by which we can understand that evidence; and what is more, He has expressly directed us (2 Peter iii. 15,) to make that use of the faculty. But in the use of all his gifts there is danger; which we cannot escape without diligent caution. And those who would guard men against the danger of doubt and disbelief, by discouraging the use of reason, are creating a much greater danger of the same kind, by the distrust which they manifest:—by appearing to suspect that their religion will not stand inquiry.

But is it, then, to be expected that you should be prepared to answer every objection that may be brought against your religion? By no means. You may have very good reason for believing something against which there are objections which you cannot answer, for want of sufficient knowledge of the subject. In many other cases besides that of religion, there will be difficulties on both sides of a question, which even the wisest man cannot clear up, though he may, perhaps, plainly see on which side the *greater* difficulties lie; and may even see good reasons for being fully satisfied *which* ought to be believed. Thus, in the case before mentioned, of the beds of sea-shells found far above the present level of the sea, there are strong objections against supposing either that the sea was formerly so much higher than now, or that those beds were so much lower, and were heaved up, many hundred feet, to the height where they now lie. And yet no one who has examined and inquired into the subject, has any doubt that those beds of shells do exist, and must, at some former time, have been the bottom of a sea.

To take another instance; the astronomer Copernicus, first taught, about three hundred years ago, that the earth (which had formerly been supposed to be at rest in the midst of the universe, with all the heavenly bodies moving round it,) travels round the sun in the course of a year, and is at the same time turning also on its own axis,—that is, rolling over like a ball—every twenty-four hours. This theory of his, (which has long since been universally admitted,) was at first met by many objections; several of which, neither he, nor any one else in those days, were able to answer. Many years afterwards, when astronomy was better understood, some objections were answered and difficulties explained. But there were others, of which no explanation could be found till a very short time ago, in the memory of many persons now living. Yet, long before that time, notwithstanding the objections, there was no one at all acquainted with the subject, who had any doubt of the earth's motion.

Again, it is perfectly well established, that aerolites, that is, stones from the sky, have fallen in various countries, and at different times, to a considerable number. They are composed of iron, or a peculiar kind of iron-stone, and are of all sizes, from a few ounces to several hundred weight. No explanation has been given of them that is at all satisfactory. There are strong objections against supposing them either to have been thrown out by volcanoes in the moon, or to be fragments torn off from some other planets, or to be formed in the air. In future generations, perhaps, when chemistry and astronomy are much improved, more may be known about these wonderful stones. But, in the mean time, the fact of their having fallen is so well attested by numerous witnesses, that, in spite of all the difficulties, no one who has inquired into the subject, has any doubt the thing has really occurred, however incredible it might have appeared.

Then, again, if we look to human transactions, we

shall find several portions of history, even those which no one has any doubt of, full of such strange events, that difficulties might be pointed out in the accounts of them, and strong objections raised against the history, even when it rests on such satisfactory evidence as to be believed in spite of those objections. In the history, for instance, of Europe for the last forty years, there are many events so improbable in themselves,—especially all that relate to the wonderful rise, and greatness, and overthrow, of the empire of Napoleon Buonaparte,—that it would be easy to find objections sufficient to convince many persons that the history could not be true, were it not that it is so well attested as to be believed notwithstanding all the difficulties.

Numberless other examples might be brought, to show how many things there are which men believe, and believe on very good grounds, in spite of strong and real objections, which they cannot satisfactorily answer; these being outweighed by more and greater difficulties on the opposite side.

As for the particular objections which have been brought against the Christian religion, and the Christian Scriptures, it would, of course, be impossible to put before you in a short compass even the chief part of them, together with the answers that have been given. But what is of the most importance is, to lay down, generally, the right way of viewing objections, either against our religion, or against anything else; namely, first, that you should not *begin* by considering the objections to any statement or system, before you are acquainted with the evidence in favour of it: and secondly, that you should not think yourself bound to renounce your faith, if you cannot answer every objection, and clear up every difficulty that may be raised; but should remember that many things are believed, and must be believed, against which there are strong objections that have never been completely answered, when there are stronger objections against the opposite belief.

SIR WALTER SCOTT'S VISIT TO THE ISLE OF STAFFA.

28th of August, 1814.—After dinner, the weather being somewhat cleared, sailed for Staffa, and took boat. The surf running heavy up between the island and the adjacent rock, called Booshala, we landed at a creek near the Cormorant's Cave. The mist now returned so thick as to hide all view of Iona, which was our land-mark; and although Duff, Stevenson, and I, had been formerly on the isle, we could not agree upon the road to the cave. I engaged myself, with Duff and Erskine, in a clamber of great toil and danger, and which at length brought me to the *Cannon-Ball*, as they call a round granite stone moved by the sea up and down in a groove of rock, which it has worn for itself, with a noise resembling thunder. Here I gave up my research, and returned to my companions, who had not been more fortunate. As night was now falling, we resolved to go aboard and postpone the adventure of the enchanted cavern until the next day. The yacht came to an anchor with the purpose of remaining off the island all night, but the hardness of the ground, and the weather becoming squally, obliged us to return to our safe mooring at Y-Columb-Kill.

29th of August, 1814.—Night squally and rainy—morning the same—we weigh however, and return toward Staffa, and, very happily, the day clears as we approach the isle. As we ascertained the situation of the cave, I shall only make this memorandum, that "when the weather will serve, the best landing

is to the lee of Booshala, a little conical islet or rock, composed of basaltic columns placed in an oblique or sloping position. In this way you land at once on the flat causeway, formed by the heads of truncated pillars, which leads to the cave. But if the state of tide renders it impossible to land under Booshala, then take one of the adjacent creeks; in which case, keeping to the left-hand along the top of the ledge of rocks which girdles the isle, you find a dangerous and precipitous descent to the causeway aforesaid, from the table." Here we were under the necessity of towing our Commodore, Hamilton, whose gallant heart never fails him, whatever the tenderness of his feet may do. He was very successfully lowered by a rope down the precipice, and proceeding along the flat terrace or causeway already mentioned, we reached the celebrated cave. I am not sure whether I was not more affected by this second, than by the first view of it. The stupendous columnar side walls—the depth and strength of the ocean with which the cavern is filled—the variety of tints formed by stalactites dropping and petrifying between the pillars, and resembling a sort of chasing of yellow or cream-coloured marble filling the interstices of the roof—the corresponding variety below, when the ocean rolls over a red, and in some places, a violet-coloured rock, the basis of the basaltic pillars—the dreadful noise of those august billows so well corresponding with the grandeur of the scene—are all circumstances elsewhere unparalleled*.

We have now seen in our voyage the three grandest caverns in Scotland, Smowe, Macallister's Cave, and Staffa; so that we may be supposed to know some thing of the matter. It is, however, impossible to compare scenes of nature so different, nor, were I compelled to assign a preference to any of the three, could I do it, but with reference to their distinct characters, which might affect different individuals in different degrees. The characteristic of the Smowe Cave may in this case be called *the terrific*, for the difficulties which oppose the stranger are of a nature so uncommonly wild, as for the first time at least, convey an impression of terror—with which the scenes to which he is introduced fully correspond. On the other hand, the dazzling whiteness of the incrustations in Macallister's Cave, the elegance of the entablature, the beauty of its limpid pool, and the graceful dignity of its arch, render its leading features those of *scarce and chastened beauty*. Staffa, the third of these subterraneous wonders, may challenge *sublimity* as its principal characteristic. Without the savage gloom of the Smowe Cave, and investigated with more apparent ease, though, perhaps, with equal real danger, the stately regularity of its columns forms a contrast to the grotesque imagery of Macallister's Cave, combining at once the sentiments of grandeur and beauty. The former is, however, predominant, as it must necessarily be in any scene of the kind.

* For a fuller and more particular account of Staffa, see *Saturday Magazine*, Vol. V., p. 83.

[LOCKHART'S *Life of Sir Walter Scott*.]

We all complain of the shortness of time, and yet have much more than we know what to do with. Our lives are spent either in doing nothing at all, or in doing nothing to the purpose, or in doing nothing that we ought to do; we are always complaining our days are few, and acting as though there would be no end of them.—SENECA.

UNSOCIABLE tempers are contracted in solitude, which will in the end not fail of corrupting the understanding as well as the manners, and of utterly disqualifying a man for the satisfactions and duties of life. Men must be taken as they are, and we neither make them nor ourselves better by flying from or quarrelling with them.—BURKE.

FACTS IN COMPARATIVE ANATOMY.

THE stomach and intestine of that voracious creature, the shark, is, compared with the size of the fish, a short narrow bag, and seems but little adapted to the wants of its rapacious possessor; but the want of capacity is curiously compensated by the internal structure of the intestine. The powers of digestion possessed by a stomach are in proportion to the extent of surface to which the food can be exposed. In the shark, the peculiar arrangement of the continuation of this organ, increases the digestive surface to as great an extent as if the stomach itself were several times enlarged. Fig. 1 shows a section of a portion of the stomach and intestine of this tyrant of the deep.



Fig. 1.

A is the lower portion of the stomach; c the pylorus, or opening from the stomach into the upper part of the intestine n. This part, instead of possessing a simple cavity, has its inner surface curiously arranged in a spiral form. It is at once evident, that this formation of the organ must produce the desired effect; namely, that of enlarging the digestive surface without increasing the size of the intestine. The same formation occurs in a portion of the intestinal canal of the sturgeon, another cartilaginous fish.

The celebrated John Hunter was the first to notice a very singular fact in the anatomy of the crop of the pigeon, during the breeding season. The young pigeon, it is well known, is fed by its parents for some time after it is hatched, the cock bird sharing the labour of feeding its offspring with the hen, as it did that of sitting on the eggs. The inside

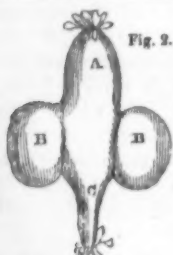


Fig. 2.

of the crop of the pigeon, at any other period of its existence, is perfectly smooth, and if inverted and filled with air, would appear like fig. 2; a being the lower part of the œsophagus, or food-pipe, proceeding from the mouth, n n, the two lobes of the crop, and the lower œsophagus, leading to the gizzard.

While the process of incubation is going on, a most material change takes place in the appearance of the crop, which continues until the young pigeon can feed itself. Fig. 3 shows the inside of the crop in its altered state.



Fig. 3.

It will be seen that the surface of both the lobes is thickened and wrinkled; at the same time a substance like curd is secreted, with which for a few days the young bird is fed, until it can digest more solid food. The alteration of the crop enables the old bird to soften a larger quantity of food than it would be

otherwise enabled to do; and in this office it is as we have noticed, assisted by its mate; for the most singular part of this provision of nature is, that the crop of the male pigeon has undergone the same change as that of the hen.

"Besides the dove kind," Mr. Hunter observed, "I have some reason to suppose parrots to be endowed with the same faculty, as they have the power of throwing up the contents of the crop, and feeding one another. I have seen the cock parakeet regularly feed

the hen, by first filling his own crop, and then supplying her from his beak. Parrots, macaws, cockatoos, &c., when they are very fond of the person who feeds them, may likewise be observed to have the action of throwing up the food, and often do it."

AUTUMN IN AMERICA.

OUR Autumn walks were delightful; the sun ceased to scorch; the want of flowers was no longer peculiar to Ohio; and the trees took a colouring, which in richness, brilliance, and variety, exceeded all description. I think it is the maple, or sugar-tree, that first sprinkles the forest with rich crimson; the beech follows, with all its harmony of golden tints, from pale yellow up to brightest orange.

The dog-wood gives almost the purple colour of the mulberry; the chestnut softens all with its frequent mass of delicate brown, and the sturdy oak carries its deep green into the very lap of Winter. These tints are too bright for the landscape painter; the attempt to follow nature in an American Autumn scene must be abortive. The colours are in reality extremely brilliant, but the medium through which they are seen increases the effect surprisingly. Of all the points in which America has the advantage of England, the one I felt most sensibly was the clearness and brightness of the atmosphere. By day and by night this exquisite purity of air gives ten-fold beauty to every object. I could hardly believe the stars were the same; the Great Bear looked like a constellation of suns; and Jupiter justified all the fine things said of him in those beautiful lines, from I know not what spirited pen, beginning,—

I looked on thee Jove! till my gaze
Shrunk, smote by the power of thy blaze.

I always remarked that the first silver line of the moon's crescent attracted the eye on the first day in America, as strongly as it does here on the third. I observed another phenomenon in the crescent moon of that region, the cause of which I less understood. That appearance which Shakspeare describes as "the new moon, with the old moon in her lap," and which I have heard ingeniously explained as the effect of earth light, was less visible there than here.

Cuyp's clearest landscapes have an atmosphere that approaches nearer to that of America than any I remember on canvass; but even Cuyp's air cannot reach the lungs, and, therefore, can only give an idea of half the enjoyment; for it makes itself felt as well as seen, and is, indeed, a constant source of pleasure.—MRS. TROLLOPE'S America.

THE proverbial oracles of our parsimonious ancestors have informed us, that the fatal waste of fortune is by small expenses, by the profusion of sums too little singly to alarm our caution, and which we never suffer ourselves to consider together. Of the same kind is prodigality of life; he that hopes to look back hereafter with satisfaction upon past years, must learn to know the present value of single minutes, and endeavour to let no particle of time fall uselessly to the ground.

An Italian philosopher expressed in his motto, that time was his estate; an estate, indeed, that will produce nothing without cultivation, but will always abundantly repay the labours of industry, and satisfy the most extensive desires, if no part of it be suffered to lie waste by negligence, to be overrun by noxious plants, or laid out for show rather than for use.—JOHNSON.

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